Welcome to the Power Plant Improvement Initiative Webcast

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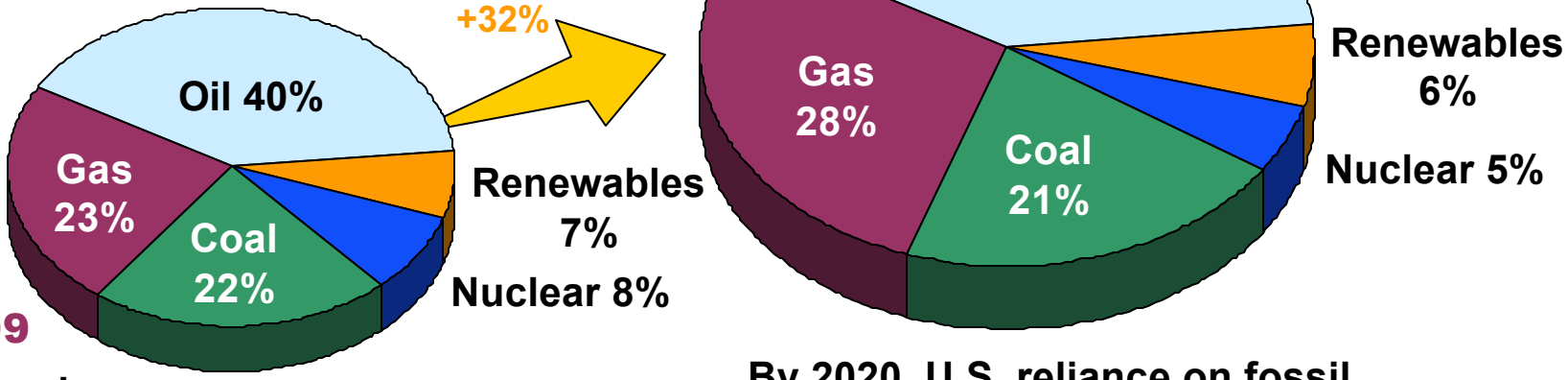
Fossil Energy: America's Energy Foundation

Fossil fuels provide 85% of nation's energy (67% of its electricity)



By 2020, U.S. reliance on fossil fuels could grow to 90%

"…An effective energy policy must reflect the fact that, for the foreseeable future, hydrocarbons – oil, coal, and especially clean-burning natural gas – will continue to play a critical role in meeting the growing energy needs of the New Economy."

Bush/Cheney Energy Policy Platform

The Nation's Energy Challenges

Energy Reliability

- **Strained power supply** – unforeseen growth, restructuring uncertainty, regional brownouts, rapid price escalations
- **Growing demands on gas & electric infrastructure** – need for new pipelines, power lines, and gas storage
- **More challenging gas supplies** – domestic formations becoming increasingly difficult to find/produce

Cleaner Energy at Affordable Costs

- **Reducing power plant emissions** – airborne particles, mercury, smog- and ozone-forming pollutants
- **Cleaner transportation fuels** – emissions from autos, trucks, and buses account for 40% of U.S. air pollution; no-sulfur fuels necessary for new, high performance engines
- **Curbing global climate change** – fossil energy use accounts for 81% of U.S. greenhouse gas emissions (1998)

Energy Security

- **Rising oil imports** – 55% today; 70% by 2020

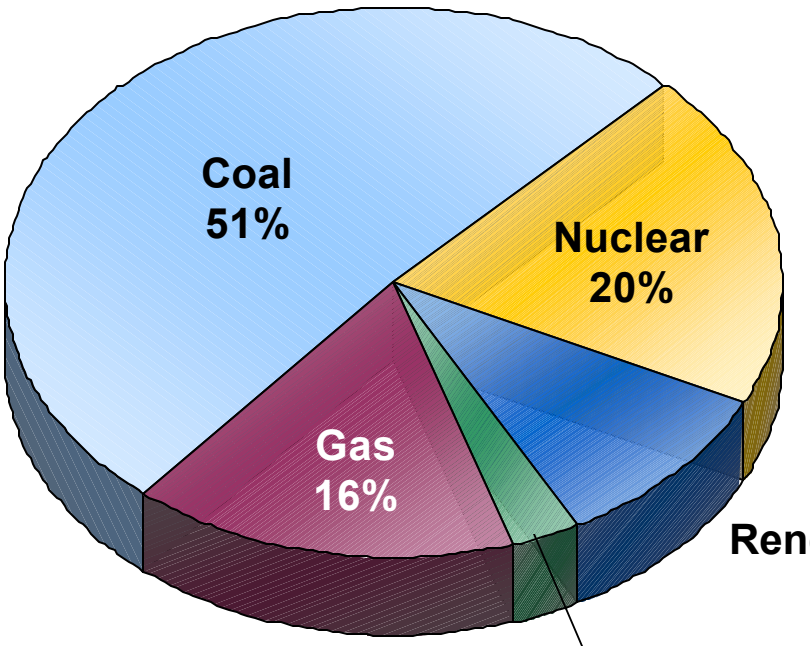
NETL

Our Philosophy

- **Increasing supply (oil, gas, coal, electricity) is <u>equally</u> as important as reducing demand (efficiency)**
- **Nation must extend usefulness of today's energy resources <u>and</u> accelerate development of new resources**
  - Including power plants
- **<u>No need</u> to sacrifice environmental progress to strengthen America's energy future**
- **<u>Both</u> incentives (tax, royalty, regulatory) and advanced technology must be part of national energy strategy**

Coal-Fired Power Generation RD&D

A "Greener, Sooner" Strategy



U.S. Power Generation (by source)

Existing Fleet Technologies

- Emission control (NOx,SOx, PM2.5, mercury/air toxics)
- Efficiency improvements

Mid-Term Markets

- Improved environmental technology
- Repowering & retrofitting for Efficiency improvements

Vision 21-Future Energy Plants

- Near-zero emissions
- Technology innovation
- Market flexibility and competitive economics

The Power Plant Improvement Initiative

Included in FY01 Appropriations ($ 95M)

Purpose:

Increase supply of electricity through technology improvements at fossil fueled power plants that can:

- Prevent recurrence of rolling brownouts, blackouts
- Increase reliability (new operational controls)
- Boost generating capacity
- Modernize environmental controls

Timetable:

Act specifies competitive solicitation by mid-February 2001; 1st project selections by mid-October 2001

Key:

Close coordination with EPA to ensure environmental compliance goals can be met

Potential:

Extend program beyond FY01 with new competitions to include natural gas-fueled generation

Industry and Government Working Together Have Done Great Things!

- Low-NOx burners now on 75% of U.S. capacity
- SCR to reduce NOx now half original cost; orders for 30% of U.S. capacity
- Scrubbers now 1/3rd cost of '70s vintage; more than 400 commercially deployed
- Thorough database on power plant mercury emission levels and controls
- New, high-strength alloys for power plants
- Development of FBC's – combustion "success story" of the 1970s-80s
- Introduction of IGCC– with unparalleled efficiency gains and super-clean performance
- Breakthrough in gas turbine technology with 60% efficient systems and NOx emissions cut in half

Continued decline in air emissions and greenhouse gases without adding cost burdens to economic growth

The PPII Enables the Progress to Continue

"This initiative is another step in an effort to bring increased efficiency and new technologies to coal-burning plants.

It also represents an area that is certain to be part of a balanced and comprehensive national energy policy to help us meet the energy demands and needs of the country well into the future."

Spencer Abraham
Secretary of Energy